UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,306	10/31/2003	Mina Farr	15436.84.1	5448

7590 06/19/2006

William J. Athay
WORKMAN NYDEGGER
1000 EAGLE GATE TOWER
60 EAST SOUTH TEMPLE
SALT LAKE CITY, UT 84111

EXAMINER	
FINNEREN, RORY B	

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 06/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/700,306	FARR, MINA	
	Examiner	Art Unit	
	Rory Finneren	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *20 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 14-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12, 14-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Examiner acknowledges the cancellation of claim 13, the amendment of claims 1, 3, 12, 14, 16, 21, and 22, as well as the addition of new claims 26-29. The examiner acknowledges that claims 1-12 and 14-29 are now pending in view of the above amendments.

Objections to claims 1 and 21 based on minor informalities are withdrawn based on corrections applied in applicant's amendment.

Response to Arguments

Applicant's arguments filed 20 March 2006 have been fully considered but they are not persuasive.

Applicant contends that the reference used to reject claims 1, 2, 11, and 16 under 35 U.S.C. § 103, *Ohshima* (U.S. Patent No. 4,998,256) fails to teach or suggest each and every element of the rejected claims.

Regarding claim 1, the applicant argues that the examiner has failed to show that *Ohshima* discloses "a common substrate, wherein the surface, the collimating lens, the filter layer, the first photosensitive area, and the second photosensitive area are supported by the common substrate" as set forth in amended claims 1 and 16. The examiner would like to bring attention to Fig. 9 of *Ohshima* where the reference teaches a "package" 43 that the individual components are contained on and within. The

examiner contends that this "package" 43 is a disclosure of "a common substrate, wherein the surface, the collimating lens, the filter layer, the first photosensitive area, and the second photosensitive area are supported by the common substrate." Therefore every limitation of the claim is disclosed and the rejection under 35 U.S.C. § 103 stands.

Regarding claim 3, applicant argues that the rejection under 35 U.S.C. § 103 as being unpatentable over *Ohshima* in view of *Cox (U.S. Patent No. 5,812,581)* is improper on the grounds that the examiner has not established that the references teach or suggest each and every element of the rejected claims. Specifically, the applicant has called attention to Fig. 3 of the *Cox* reference cited by the examiner in the office action. While it is true that members 10 and 14 are conductive strips, the photosensitive areas surrounding the conductive strips form a first and second photosensitive area arranged concentrically as claimed in claim 3. As can be seen in Fig. 3, the area between the conductors 10 and 14 forms a second circular photosensitive area concentrically surrounding the first circular photosensitive area in the center. Thus, the combination of Ohshima and Cox teaches or suggests each and every element of the Applicant's claimed invention.

Regarding claim 12, applicant has argued that the references cited by the examiner fail to teach or suggest each and every element of the rejected claims. The "summer circuit" 250 that is taught by *Munks* (in Fig. 11B and column 14, lines 18-30) sums the first and second signals from the photodetectors, 44 and 46 and uses that summed signal to determine the power of light emitted by the laser diode. The fact that

a comparison is made using a ratio during this determination process does not prevent this teaching from reading on the Applicant's present claim.

Regarding claims 14 and 15, applicant argues that the *Ohshima* reference does not teach the newly added limitations to claim 14 involving the photosensitive areas being supported by a substrate. However, in Fig. 9, *Ohshima* clearly shows the entire apparatus, including both photosensitive areas being supported by a substrate 43. Therefore Ohshima does teach each and every limitation of the claim and the rejection under 35 U.S.C. § 102 stands.

Regarding claim 22, *Ohshima* may not explicitly disclose the power of the light emitted by the laser diode being determined from a sum detection response of the two photosensitive areas. However, the *Munks* reference does teach the determination of a power of the light emitted from a sum of the signals from two photosensitive areas. So, the *Ohshima* reference in combination with *Munks* does teach every limitation of the claim and stands rejected under 35 U.S.C. § 103 as being obvious over *Ohshima* in view of *Munks*.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 11, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima (US 4,998,256) in view of Tei (6,122,301).

With respect to claim 1, Ohshima teaches the claimed wavelength locker (Col. 2, lines 38-41) comprising the claimed surface (Fig. 5, #36), the claimed collimating lens (Fig. 5, #37) the claimed filter layer (Fig. 5, #392), the claimed first photosensitive area (Fig. 5, #38), the claimed second photosensitive area (Fig. 5, #41), and the claimed common substrate (Fig. 9, #43), wherein the surface, the collimating lens, the filter layer, the first photosensitive area, and the second photosensitive area are supported by the common substrate; wherein the detection response of the first photosensitive area and the detection response of the second photosensitive area are used to determine the wavelength (Col. 13, lines 34-36) and power (Col. 4, lines 30-31) of the light emitted by the laser diode. Ohshima does teach the use of a collimating lens on either side of a filter layer (Fig.19, #15, #40). Ohshima lacks the lens being placed between the reflective surface and the filter layer. It would have been obvious to one of ordinary skill in the art at the time the invention was made to place a lens between the reflective surface and the filter layer, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Ohshima does not explicitly disclose that the said package constitutes a substrate. Tei discloses an optical module comprising a wavelength locker mounted on a substrate. It would have been obvious to a person of ordinary skill in the art at the time of the invention to mount the wavelength locker on a substrate for the purpose of

integrating the device onto a single piece of material, thus making the device more compact.

Regarding claim 2, Ohshima teaches a first collimating element (Fig. 5, #37) and a second collimating element (Fig. 5, #40), the first photosensitive area (Fig. 5, #38) receiving collimated light from the first collimating element and the second photosensitive area (Fig. 5, #41) receiving collimated light from the second collimating element.

As to claim 11, Ohshima discloses the claimed wavelength locker, wherein the wavelength of the light emitted by the laser diode is determined from a differential between the detection response of the first photosensitive area and the detection response of the second photosensitive area (Col. 1, lines 47-52).

Regarding claim 27, Ohshima discloses a wavelength locker as in claim 1, wherein the first and second photosensitive areas (Fig. 9, #21, #18) are supported by a common substrate (Fig. 9, #43) in a side-by-side configuration.

Regarding claim 28, Ohshima teaches the claimed invention except the reference does not explicitly disclose that the said "package" constitutes a "substrate". Tei discloses an optical module comprising a wavelength locker mounted on a substrate. It would have been obvious to a person of ordinary skill in the art at the time of the invention to mount the wavelength locker on a substrate for the purpose of integrating the device onto a single piece of material, thus making the device more compact.

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Munks (6,289,028) and further in view of Cox (5,812,581).

As to claim 3, Ohshima teaches the claimed wavelength locker for determining the wavelength of light emitted by a laser diode, the wavelength locker comprising:

a filter layer that comprises a first filter (Fig. 5, #392), wherein the filter layer receives light from the laser diode;

a first photosensitive area (Fig. 5, #38) that receives filtered light through the first filter and the first photosensitive area detects a first signal; and

a second photosensitive area (Fig. 5, #41) that receives light that does not pass through the first filter and the second photosensitive area detects a second signal;

wherein the lens comprises a single collimating element (Fig. 5, #35).

Ohshima does not explicitly disclose the limitation wherein a detection response of the first photosensitive area and a detection response of the second photosensitive area are used to determine the wavelength and power of the light emitted by the laser diode and Munks teaches a device that determines the power of the light emitted by a laser diode from a sum of the detection response of two photosensitive areas (Col. 3, lines 6-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima in order to determine the power of the light from a sum of the detection response of the first and second photosensitive areas for the purpose of monitoring the power in a way which is independent from changes in wavelength.

Ohshima does not explicitly disclose the two photosensitive areas being arranged concentrically. Cox teaches two photosensitive areas which are concentrically arranged (Col. 7, lines 20-40; Fig.3). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima so that the photosensitive areas were arranged concentrically for the purpose of allowing a single beam of light to strike both areas.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Cox (5,812,581).

Regarding claim 29, Ohshima discloses the invention of claim 1, however Ohshima does not explicitly disclose the two photosensitive areas being arranged concentrically. Cox teaches two photosensitive areas which are concentrically arranged (Col. 7, lines 20-40; Fig.3). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima so that the photosensitive areas were arranged concentrically for the purpose of allowing a single beam of light to strike both areas.

Claims 4, 12, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Munks (6,289,028).

With respect to claim 4, Ohshima teaches the claimed invention except for a second filter, wherein the second filter has a transmission response that is different from a transmission response of the first filter and wherein the second photosensitive

area receives light through the second filter. Munks teaches a second filter (Fig. 1, #34), wherein the second filter has a transmission response that is different from a transmission response of the first filter (Col. 2, lines 49-57) and wherein the second photosensitive area receives light through the second filter (Fig. 1, #38, #42). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima to include a second filter for the purpose of changing the transmission response ratio between the first and second photodetectors.

Regarding claim 12, Ohshima teaches the claimed invention except for the power of the light emitted by the laser diode being determined from a sum of the detection response of the first photosensitive area and the detection response of the second photosensitive area. Munks teaches a device that determines the power of the light emitted by a laser diode from a sum of the detection response of two photosensitive areas (Col. 3, lines 6-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima in order to determine the power of the light from a sum of the detection response of the first and second photosensitive areas for the purpose of monitoring the power in a way which is independent from changes in wavelength.

With respect to claim 22, Ohshima teaches the claimed method for determining the wavelength of light emitted by a laser diode, the method comprising: receiving light from the back facet of a laser diode (Fig.1, S2 and Col.1, line 19); separating the light into a first portion and a second portion (Col.1, line 21); passing the first portion of light through a first filter and onto a photosensitive surface (Fig.1, S4 and Col.1 lines 24-27);

passing the second portion of light onto a second photosensitive surface (Fig.1, S3 and Col.1, lines 22-23); and determining the wavelength of the light emitted by the laser diode from a differential between the detection response of the first photosensitive surface and the detection response of the second photosensitive surface (Col.1, lines 47-52). Ohshima does not explicitly disclose determining a power of the light emitted by the laser diode including a sum of the detection response of the first photosensitive area and the detection response of the second photosensitive area. Munks teaches a device that determines the power of the light emitted by a laser diode from a sum of the detection response of two photosensitive areas (Col. 3, lines 6-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima in order to determine the power of the light from a sum of the detection response of the first and second photosensitive areas for the purpose of monitoring the power in a way which is independent from changes in wavelength.

Regarding claim 23, Ohshima teaches the claimed method, except for prior to passing the second portion of light onto a second photosensitive surface, passing the second portion of light through a second filter. Munks teaches passing the second portion of light through a second filter prior to passing it onto a second photosensitive surface (Fig.1, #30, #34). It would have been obvious to one skilled in the art at the time of the invention to modify the teaching of Ohshima so that the light passes through a second filter before passing onto the second photosensitive surface for the purpose of changing the transmission response ratio between the first and second photodetectors.

As to claim 24, Ohshima teaches the claimed method for using the output of the first photosensitive surface and the second photosensitive surface to determine the power of the light emitted by the laser diode (Col. 4, lines 30-31).

Regarding claim 25, Ohshima teaches the claimed method comprising, prior to passing the first portion of light through a first filter, passing the first portion of light through a collimating lens (Fig. 5, #35).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Zheng (5,963,686).

With respect to claim 5, Ohshima teaches the claimed invention except for the second photosensitive area receiving light through an optically passive spacer that is adjacent the first filter. Zheng teaches a second photosensitive area (Fig. 4, #133) receiving light through an optically passive spacer (Fig. 4, #128) that is adjacent the first filter (Fig. 4, #130). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima to include an optically passive spacer adjacent to the first filter for the purpose of allowing for an unfiltered beam with which to compare the filtered beam.

Claims 6, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Nolan (3,725,817).

Regarding claim 6, Ohshima teaches the claimed invention except for the reflective surface comprising a prism. Nolan teaches a reflective surface comprising a

prism (Fig. 5, #71 and Col.7, lines 1-4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima to use a prism as a reflective surface for the purpose of preventing the absorptive losses of a mirror.

Regarding claim 17, Ohshima discloses the claimed invention except for the reflective surface comprising a prism. Nolan teaches a reflective surface comprising a prism (Fig. 5, #71 and Col. 7, lines 1-4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima to use a prism as a reflective surface for the purpose of preventing the absorptive losses of a mirror.

As to claim 18, Ohshima teaches a second lens (Fig.5, #37) that receives a second portion of the light (Fig. 5, S3), wherein the second lens collimates the second portion of the light; wherein the second photosensitive area (Fig. 5, #38) receives the second portion of the light through the second lens. Ohshima lacks prism as a reflective surface. Nolan teaches a reflective surface comprising a prism (Fig. 5, #71 and Col. 7, lines 1-4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima to use a prism as a reflective surface for the purpose of preventing the absorptive losses of a mirror.

Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Bruun-Larsen (US 20020141463 A1).

As to claim 7, Ohshima teaches the claimed invention except for the reflective surface comprising one or more dielectric filters. Bruun-Larsen teaches the use of a reflective surface with a dielectric filter (Fig. 1, "Dielectrically coated mirror"). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima to use a dielectric filter as a reflective surface for the purpose of saving space by combining the reflector and filter.

With respect to claim 8, Ohshima teaches the claimed invention except for the dielectric filter on the beamsplitter. Bruun-Larsen teaches a beamsplitter coated with dielectric filter (Paragraph [0039], lines 1-4 and Fig. 2, "Dielectrically coated beamsplitter"). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima to include a dielectric filter on a beamsplitter to obtain a beamsplitter capable of providing transmittance/reflection spectra having a very low variation in transmittance/reflection.

Regarding claim 9, Ohshima teaches the claimed invention except for the dielectric filter on an angled front facet of the beamsplitter. Bruun-Larsen teaches a beamsplitter coated with a dielectric filter (Paragraph [0039], lines 1-4 and Fig. 2, "Dielectrically coated beamsplitter"). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima to include a dielectric filter on an angled front facet of the beamsplitter to obtain a beamsplitter capable of providing transmittance/reflection spectra having a very low variation in transmittance/reflection.

With respect to claim 10, Ohshima teaches the claimed invention except for the dielectric filter on an angled back facet of the beamsplitter. Bruun-Larsen teaches a beamsplitter coated with a dielectric filter (Paragraph [0039], lines 1-4 and Fig. 2, "Dielectrically coated beamsplitter"). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima to include a dielectric filter on an angled back facet of the beamsplitter to obtain a beamsplitter capable of providing transmittance/reflection spectra having a very low variation in transmittance/reflection.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima (4,998,256) in view of Tei (6,122,301).

As to claim 14, Ohshima teaches the claimed wavelength locker comprising: a first photosensitive area supported by a package (Fig. 9, #21); a second photosensitive area supported by the substrate and located adjacent to the first photosensitive area (Fig. 9, #18); means for receiving light from a laser diode and directing a first portion of the light onto the first photosensitive area and directing a second portion of the light onto the second photosensitive area (Fig. 9, #16); and an optical filter (Fig. 9, #191, #192) that modifies the portion of the light that is directed to the first photosensitive area; wherein the detection response of the first photosensitive area and the detection response of the second photosensitive area are used to determine the wavelength (Col 13, lines 34-36) and power (Col.4, lines 30-31) of the light emitted by the laser diode.

Ohshima does not explicitly disclose that the said "package" constitutes a "substrate". Tei discloses an optical module comprising a wavelength locker mounted on a substrate. It would have been obvious to a person of ordinary skill in the art at the time of the invention to mount the wavelength locker on a substrate for the purpose of integrating the device onto a single piece of material, thus making the device more compact.

Regarding claim 15, Ohshima teaches the claimed wavelength locker, wherein the means for receiving light from a back facet of a laser diode and directing a first portion of the light onto the first photosensitive area and a second portion of the light onto the second photosensitive area comprises a mirror (Fig. 9, #191, #192), a reflective surface (Fig. 9, #16), a beamsplitter (Fig. 9, #16), and a lens (Fig. 9, #15, #17, #20).

With respect to claim 16, Ohshima teaches an optical transceiver, comprising:

a laser diode that emits light from front and back facets thereof (Fig. 9, #11);

a controller module (Fig. 3, #22) that modifies the wavelength of the light based upon a determined wavelength of the light; and

a wavelength locker that determines the wavelength of the light, comprising:

a reflective surface that receives light from the back facet of the laser diode (Fig. 9, #16);

a first lens that receives the light reflected by the reflective surface (Fig. 9, #15);

a filter layer that includes a first filter, wherein the first filter receives the collimated light from the first lens (Fig. 9, #19);

a detector including a first photosensitive area (Fig. 9, #21) and second photosensitive area (Fig. 9, #18), wherein the first photosensitive area receives light through the first filter to detect a first signal and the second photosensitive area receives light that does not pass through the first filter to detect a second signal, wherein the wavelength of the light is determined from differential between the first signal and the second signal (Col. 1, lines 47-52).

Ohshima does not explicitly disclose that the said "package" constitutes a "substrate". Tei discloses an optical module comprising a wavelength locker mounted on a substrate. It would have been obvious to a person of ordinary skill in the art at the time of the invention to mount the wavelength locker on a substrate for the purpose of integrating the device onto a single piece of material, thus making the device more compact.

Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Flanders (6,366,592).

With respect to claim 19, Ohshima teaches the claimed invention except for the laser diode being mounted upon a laser diode submount and a thermoelectric cooler upon which the wavelength locker and the laser diode submount are mounted. Flanders teaches a laser diode (Fig.1, #116) mounted upon a laser diode submount

(Fig.1, #105) and a thermoelectric cooler upon which the wavelength locker and the laser diode submount are mounted (Col. 3, lines 64-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teaching of Ohshima to mount a laser diode on a laser diode submount so as to minimize any straining of the diode and to mount the wavelength locker and laser diode submount on a thermoelectric cooler for the purpose of being able to control the temperature of the diode, and thus the wavelength of the output beam.

Regarding claim 20, Ohshima teaches the claimed invention except for the controller in communication with each of the detector and the thermoelectric cooler, wherein the controller controls the temperature of the thermoelectric cooler based upon the wavelength of the light as detected by the detector. Flanders teaches a controller that controls the temperature of the thermoelectric cooler based upon the wavelength of the light detected by the detector (Col. 5, lines 33-46). It would have been obvious to one skilled in the art at the time of the invention to modify the teaching of Ohshima to include a thermoelectric cooler controlled by a controller based upon the wavelength of the light detected by the detector for the purpose of tuning the wavelength of the laser based upon the detected output wavelength.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Perry (US 20020001321 A1).

As to claim 21, Ohshima teaches the claimed invention except for a first mirror that receives light from the front facet of a laser diode; a lens that receives the reflected

light from the first mirror and collimates or focuses the light; and a second mirror that receives the light from the lens and reflects the light in a desired direction towards other optical components. Perry teaches a first mirror that receives light from the front facet of a laser diode (Fig. 4, #48); a lens that receives reflected light from the first mirror and collimates or focuses the light (Fig. 4, "Lens"); and a second mirror that receives the light from the lens and reflects the light in a desired direction towards other optical components (Fig. 4, mirror following "Lens" in beam path). It would have been obvious to one skilled in the art at the time of the invention to modify the teaching of Ohshima to include a first mirror, a lens, and a second mirror for the purpose of directing the laser beam to other optical components.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohshima in view of Kirkby (4,583,227).

Regarding claim 26, Ohshima discloses the wavelength locker as in claim 1, however the Ohshima reference does not explicitly disclose that the collimating lens, the surface, the filter and the photosensitive area are situated upon each other as defined in the claim. Kirkby, however, does disclose a semiconductor laser structure wherein a collimating lens (Col. 7, lines 26-30) is situated upon a structure including a surface that receives light from a facet of a laser diode, a filter layer situated upon the collimating lens, and a photosensitive area situated upon the filter layer (see Fig. 4; Col. 6, lines 30-47). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to situate the various components on top of one

another in order to effectively place them on a semiconductor substrate as demonstrated by Kirkby.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rory Finneren whose telephone number is (571) 272-2243. The examiner can normally be reached on Mon. - Fri. 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Oh Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Minsun Harvey
Supervisory Patent Examiner
Art Unit 2828

RBF

ARMANDO RODRIGUEZ
PRIMARY EXAMINER